

WHAT IS CLAIMED IS:

1. An isolation assembly for associating a downhole tool with coiled tubing of a well bore, comprising:

a housing adapted to associate the downhole tool with the coiled tubing, the housing having an inner diameter in fluid communication with an outer diameter via a housing port;

a shuttle slidably disposed within the housing, the shuttle having an inner diameter in fluid communication with an outer diameter via a shuttle port;

a check valve within the isolation assembly adapted to selectively preclude fluid communication through the isolation assembly; and

a biasing means adapted to bias the shuttle within the housing such that the housing port is out of alignment with the shuttle port precluding fluid communication therethrough.

2. The assembly of claim 1 in which the housing further comprises:

an upper body having an upper body sleeve moveably attached to the shuttle; and

an external body attaching the upper body to the downhole tool, the housing port being within the external body.

3. The assembly of claim 2, in which the shuttle further comprises:

an upper shuttle body having a sleeve movably attached to the sleeve on the upper body;

a check valve module for housing the check valve; and

a lower shuttle body, the shuttle port being located in the lower shuttle body.

4. The assembly of claim 3, in which the check valve is biased in a closed position precluding fluid communication through the isolation assembly, the valve being openable

by pumping fluid into the coiled tubing to generate a positive differential pressure above the check valve

5. The assembly of claim 3 in which the check valve is biased closed by a flapper check valve spring, thus precluding fluid communication through the isolation assembly.

6. The assembly of claim 1, in which the check valve is a flapper check valve pivotally attached to the shuttle assembly, the flapper check valve adapted to open to allow fluid communication through the isolation assembly when a positive differential pressure supplied via the coiled tubing exists above the flapper check valve, the flapper check valve adapted to close when a positive differential pressure exists below the flapper check valve.

7. The assembly of claim 6, in which the flapper check valve is biased in a closed position by a biasing force of a flapper check valve spring pivotally attached to the shuttle assembly, the flapper check valve adapted to open when the positive differential pressure that exists above the flapper check valve is sufficient to overcome the biasing force of the flapper check valve spring.

8. The assembly of claim 7 in which a differential pressure is generated across the check valve when pressure within the coiled tubing string is reduced, thus closing the check valve, an upward force being exerted on the check valve when in a closed position.

9. The assembly of claim 8 in which the shuttle moves upwardly with respect to the housing when the upward force on the closed check valve exceeds the downward force of the biasing means.

10. The assembly of claim 9 in which the upward movement of the shuttle is limited by a stop on the upper body contacting a shelf on the upper shuttle body.

11. The assembly of claim 9 defining an open position of the isolation assembly when the shuttle port and the housing port are at least partially aligned, providing fluid communication therethrough, out of the isolation assembly below the check valve and into an annulus.
12. The assembly of claim 7 in which the shuttle further comprises a check valve module having a flapper recess, the flapper recess adapted to envelope the flapper when the flapper check valve is open to allow fluid communication through the assembly.
13. The assembly of claim 7, in which the biasing means comprises a spring surrounding the sleeve of the upper body and the sleeve on the upper shuttle body.
14. The assembly of claim 13, in which the spring is in compression and is disposed between the upper body and the upper shuttle body, thereby supplying a downward force on the upper shuttle body.
15. The assembly of claim 14 in which the downward movement of the shuttle is limited by a lower end of the lower shuttle body contacting a shelf on the external body of the housing.
16. The assembly of claim 1 in which the downhole tool is a straddle packer.
17. A bottom hole assembly for a coiled tubing string, comprising:
a straddle packer having an upper cup and a lower cup;
an isolation assembly adapted to associate the straddle packer with the coiled tubing, the isolation assembly having a check valve adapted to selectively preclude fluid communication through the isolation assembly, a shuttle having a port moveably attached to a housing having a port, and a biasing means adapted to bias the shuttle within the

housing such that the housing port is out of alignment with the shuttle port precluding fluid communication therethrough and into an annulus.

18. A method of fracing or stimulating a formation, comprising:

associating a straddle packer with a coiled tubing string via an isolation assembly;

straddling a zone to be fraced with the packer on coiled tubing;

setting the packer;

pumping fluid through the coiled tubing, through the isolation device, and into the packer;

bleeding back a pressure of the fluid in the coiled tubing string, thus closing a check valve in the isolation assembly, the packer remaining set;

providing fluid communication through a plurality of aligned ports below the check valve in the isolation assembly and into the annulus, the fluid communication through the ports and into the annulus allowing the pressure inside the packer to equalize with the pressure of the annulus to unset the packer; and

repositioning the packer within the casing.

19. The method of claim 18, in which the step of connecting further comprises directly connecting the packer to the coiled tubing.

20. The method of claim 19, in further comprising straddling with the packer a second zone to be fraced or stimulated.

21. The method of claim 20, in which the step of pumping fluid further comprises pumping a non-sand-laden fluid.

22. The method of claim 21, in which the step of pumping a non-sand-laden fluid further comprises pumping a fluid comprised of nitrogen gas, liquid or gaseous carbon dioxide, water based fluids, hydrocarbon based fluids, or a mixture of these fluids.

23. The method of claim 18, in which the step of bleeding back the pressure of the fluid in the coiled tubing string further comprises bleeding back the pressure such that an internal surface pressure in the coiled tubing is between 0 and 15 p.s.i.

24. The method of claim 19, further comprising providing an isolation assembly having a check valve for selectively providing fluid communication through the isolation assembly, the check valve opening to provide fluid communication through the isolation assembly when the fluid is pumped at a sufficient predetermined pressure, the check valve being closed to preclude fluid communication through the isolation assembly when the pressure within the coiled tubing is bled off below the predetermined pressure.

25. The method of claim 19, in which the step of providing fluid communication through a plurality of aligned ports further comprises:

providing fluid communication through a shuttle port in a shuttle of the isolation assembly, the shuttle adapted to move upwardly with respect to a housing having a housing port of the isolation assembly, when an upward force on the check valve exceeds a downward force of a shuttle spring, the shuttle moving upwardly within the housing until the port in the shuttle at least partially aligns with the port in the housing.